



American Institute of Chemical Engineers  
Dallas Section  
February 2025

## Join us for our meeting on February 25, 2025

**Join us at 6:30 pm at our usual location:**

Two Guys from Italy, 11637 Webb Chapel Road, Dallas,  
Texas

**Our speaker:** John E. Spencer, PhD

**Title:** The career of a chemist: From Post-doc to Research Chemist to Process Engineer to Entrepreneur to Businessman

### **Abstract**

**Post-doc:** Figuring out how to produce (without getting blown up) multiple mole quantities of chlorine nitrate from one of the two known syntheses:  $\text{ClF} + \text{anhydrous nitric acid}$  or  $\text{Cl}_2\text{O} + \text{N}_2\text{O}_5$ . University of California, Irvine.

**Research Chemist:** studying the chemistry of W, Na, Sc, Th, Cd, and I in a quartz vessel at high temperatures, high pressures, and high current electric arc. Why do Sylvania lamps work better?  
General Electric Company

**Process Engineer:** Developing the Plasma Etch Reactor as a high volume production tool. Texas Instruments

**Entrepreneur:** Acting on a vision using my chemistry background: Taking the Paneth Mirror Experiment and the Flowing Afterglow reactor and developing a production tool. PlasmaQuest.

**Businessman:** Building a team with a world class laser expert to make novel precision laser diodes using proprietary plasma etching processes. Photodigm.

Along the way I learned many things, among them:

- *The engineering manager has the hardest job in a technology company.*
  - *The front door and the back door are close together in any business.*
  - *You never forget the two worst days in the business.*
  - *Besides those two days, every day is the best day.*
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### Speaker bio

John Spencer founded Photodigm in 2000 with world-renown laser expert Professor Gary Evans of SMU and two other co-founders. From the beginning, our vision for the company was to exploit the precision and scalability of semiconductor fabrication to develop novel capabilities for laser diodes and other photonic devices. Under John's leadership as CEO, Photodigm, building on the strength of a world class technical team and a dedicated in-house semiconductor laser fab, has emerged as the leading commercial supplier of single frequency DBR laser diode products for use in frequency references, cold atom physics, low noise, optical pumping, lidar, and spectroscopy. Used by quantum researchers worldwide today, Photodigm's proprietary Spectroscopy-Certified™ DBR lasers are fueling our customers' visions of the quantum future. John retired from Photodigm in 2022 and remains on its Board of Directors.



Prior to founding Photodigm, John founded PlasmaQuest in 1988 to commercialize microwave plasma processing for the semiconductor industry. PlasmaQuest was sold to a public company in 1998. He also worked as a research chemist at GE Lighting Business and as process engineer at Texas Instruments, and Director of Technology at Machine Technology, Inc. Over the course of his career he has published over 50 scientific and technical articles and has multiple patents in areas ranging from discharge lamps to semiconductor

processing to lasers, the most recent patent having been issued in 2022 concerning the application of lasers in driverless vehicles. Following his retirement from Photodigm, John has worked as an expert witness in several patent and intellectual property cases. These include patent cases involving Inter Partes Review, Ex-parte Reviews, and testimony in federal court involving intellectual property theft.

John has a Ph.D. in physical chemistry from Rice University and a B.S. degree in chemistry from Millsaps College. He did postdoctoral research at the University of California, Irvine.

## **Would you consider serving in the Executive Committee next fiscal year?**

If you are interested in serving your Local Section as an officer or director, we will have elections next June. This is a great opportunity to get more involved and help your local section. The commitment for most positions is only one year, except for the position of Chair, which is expected to move on to Past Chair. We encourage you to volunteer for one of the following positions:

- Chair
- Vice Chair
- Secretary
- Treasurer
- Director

If you have an interest, or want to know more about what is involved, please reply to this announcement by writing to [fja@aguivel.com](mailto:fja@aguivel.com).

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## **Do you need an ethics PDH to renew your PE license?**

The Texas Board of Professional Engineers and Land Surveyors (TBPELS) offers ethics webinars that meet the

requirements for PE license renewal. The next webinars are scheduled on the following dates.

- March 19, 2025
- March 20, 2025

Registration will open approximately one month prior to each webinar. To check availability of webinars and to register, visit [pels.texas.gov/webinars.html](https://pels.texas.gov/webinars.html)

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## Have you ever struggled communicating up?

The AIChE Management Division is presenting a webinar on the topic “Communicating Up the Hierarchical Ladder”, which you may find interesting and useful. The webinar is scheduled on March 20, 2025, at 2:00 pm EDT. To participate you must register in advance. You can find more details and a link to register by visiting this [LINK](#).

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## Stay current with announcements in our LinkedIn group

Our LinkedIn group is public, so anyone with a LinkedIn account can see our news. If you wish to comment or post information, you can join the group. To join, visit: [AIChE Dallas Section LinkedIn Group](#)

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